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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,762	07/19/2004	Wataru Hattori	8040-1059	2934
466	7590	11/15/2005		
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER MULPURI, SAVITRI	
			ART UNIT 2812	PAPER NUMBER

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/501,762

Applicant(s)

HATTORI, WATARU

Examiner

Savitri Mulpuri

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to the applicant's communication, providing English translation of the foreign priority document, filed on 8/23/2005. In view of the verified translation of the Japanese priority application, applied reference by Lee et al in previous office is now withdrawn

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-6, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Choi et al (2202/0094496 A).

Choi et al et al teaches a method of making surface acoustic wave device (SAW) by the following process steps (see page 2, para 0021). Though Choi et al teaches SAW, but does not mention electrode formation on piezoelectric substrate.

With respect to claims 1, 4, 6, 9 depositing transfer layer "18" on substrate "20"; providing a template "12" of silicon or silicon oxide having recess and protrusions, coated with an organic layer "13" (see page 6, para 0096-0097) pressed against transfer layer coated on substrate "20" so as to form resist groove pattern (see fig. 2 A-2 E and

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related description). Choi et al teaches different devices including SAW (see page 2, para 0021), wherein the substrate must be piezoelectric material to form electrode pattern or wiring using using resist pattern.

With respect to claims 5, 8 template is formed by electron beam exposure (see page 12, para 0163)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al in combination with Admitted prior art.

Choi et al do not teach electrode formation, ashing and width electrode pattern

Admitted prior art teaches surface acoustic wave device by the following process steps: providing a piezoelectric substrate; depositing a resist on the substrate and performing photolithography and depositing metal on the piezoelectric substrate both on the exposed substrate and on the resist and lift of the resist to leave the electrode on the piezoelectric substrate. With respect to claim 3 Admitted prior art teaches depositing electrode first on the substrate and then depositing resist and perform photolithography. Admitted prior art teaches resist pattern formed electron beam technique give electrode

width less than 0.4 microns. It would have been obvious to one of ordinary skill in the art to deposit electrode layer first and then photo resist or vice versa in the invention of Choi et al to form electrode formation because either way result electrode pattern on the piezoelectric substrate. It also would have been obvious to one of ordinary skill in the art to use ashing to remove organic particles resulted from the resist.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted prior art in combination with Choi et al (2002/0094496A)

With respect to claims 1-2, 9 Admitted prior art teaches surface acoustic wave device by the following process steps: providing a piezoelectric substrate; depositing a resist on the substrate and performing photolithography and depositing metal on the piezoelectric substrate both on the exposed substrate and on the resist and lift of the resist to leave the electrode on the piezoelectric substrate. With respect to claim 3 Admitted prior art teaches depositing electrode first on the substrate and then depositing resist and perform photolithography. Admitted prior art teaches resist pattern formed electron beam technique give electrode width less than 0.4 microns.

Admitted prior art only teaches photolithography but not does not teach imprinting technology to form SAW.

Choi et al et al teaches a method of making surface acoustic wave device (SAW) by the following process steps (see page 2, para 0021). Though Choi et al teaches SAW, but does not mention electrode formation on piezoelectric substrate.

With respect to claims 1, 4, 6, 9 depositing transfer layer "18" on substrate "20"; providing a template "12" of silicon or silicon oxide having recess and protrusions,

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coated with an organic layer "13"(see page 6, para 0096-0097) pressed against transfer layer coated on substrate "20" so as to form resist groove pattern (see fig. 2 A-2 E and related description). Choi et al teaches different devices including SAW (see page 2, para 0021), wherein the substrate must be piezoelectric material to form electrode pattern or wiring using using resist pattern.

With respect to claims 5, 8 template is formed by electron beam exposure (see page 12, para 0163)

With respect to claim 7, ashing is obvious process in the invention of Admitted prior art because ashing the photo resist is essential to remove residual material of the resist. It would have been obvious to one of ordinary skill in the art to use ashing after patterning the resist to eliminate organic resist particles to obtain pure electrode pattern on the a piezoelectric substrate.

With respect to claim 8 electrode width of the electrodes less than 0.4 microns because template is formed by electron beam exposure, which produces the template with protrusion and recess with narrow pattern.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bailey (200/0115002 A) also teaches plastic template '230" by using x-ray lithography not by electron beam lithography.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Savitri Mulpuri whose telephone number is 571-272-1677. The examiner can normally be reached on Mon –Fri from.8-4.30.p.m

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt, can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Savitri Mulpuri
Primary Examiner
Art Unit 2812